

In the Claims:

1. A battery separator comprising:

a wettable, uniform mat of melt blown fibers, said fibers being thermally bonded to one another, said fibers being made of a thermoplastic material being selected from the group consisting of: polystyrenes, polyvinyl chlorides, polyacrylics, polyacetals, polyamides, polycarbonates, polyesters, polyetherimides, polyimides, polyketones, polyphenylene ethers, polyphenylene sulfides, and polysulfones, said fibers having diameters in the range of 0.1 to 13 microns with 50% of said fibers having diameters less than 0.5 microns, said fibers having lengths greater than 12 millimeters, said mat having a basis weight ranging from 6 to 160 grams per square meter and a thickness of less than 75 microns, and an average pore size ranging from 0.3 to 50 microns.

2. The battery separator of claim 1 wherein 50% of the fibers have diameters less than 0.5 microns.

3. The battery separator of claim 1 wherein said wettable mat further comprising means for hydrophilizing.

4. The battery separator of claim 1 wherein said fibers having diameters in the range of 0.1 to 5 microns with 85% of the fibers having diameters less than 0.5 microns.

5. The battery separator of claim 1 wherein said mat having a basis weight in the range of 10 to 35 grams per square meter.

6. A multi-layered battery separator wherein one said layer being said mat of melt blown fibers of claim 1.

7. A battery comprising:

an anode, a cathode, a separator sandwiched between said anode and said cathode, and an electrolyte wetted out on said separator and being in ionic communication with said anode and said cathode, said separator further comprising a uniform mat of melt blow fibers, said fibers being thermally bonded to one another, said fibers being made of a thermoplastic material being selected from the group consisting of: polystyrenes, polyvinyl chlorides, polyacrylics, polyacetals, polyamides, polycarbonates, polyesters, polyetherimides, polyimides, polyketones, polyphenylene ethers, polyphenylene sulfides, and polysulfones, said fibers having diameters in the range of 0.1 to 13 microns with 50% of said fibers having diameters less than 0.5 microns, said fibers having lengths greater than 12 millimeters, said mat having a basis weight in the

range of 6 to 160 grams per square meter, a thickness less than 75 microns, and an average pore size of 0.3 to 50 microns.

8. The battery of claim 7 wherein said separator further comprising 50% of the fibers have diameters less than 0.5 microns.

9. The battery of claim 7 wherein said wettable mat further comprising means for hydrophilizing.

10. The battery of claim 7 wherein said fibers having diameters in the range of 0.1 to 5 microns with 85% of the fibers having diameters less than 0.5 microns.

11. The battery of claim 7 wherein said mat having a basis weight in the range of 10 to 35 grams per square meter.

12. The battery of claim 7 wherein said separator further comprising a multi-layered separator wherein one said layer being said mat of melt blown fibers of claim 7.